UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,800	12/06/2000	Kuniya Kaneko	032218-011	8148

7590 05/07/2007

Platon N. Mandros
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER	
CHOI, PETER H	
ART UNIT	**PAPER NUMBER**
3623	

MAIL DATE	DELIVERY MODE
05/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/729,800	KANEKO ET AL.	
	Examiner	Art Unit	
	Peter Choi	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17-28 and 36-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,17-28 and 36-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 2, 2007 has been entered.

Response to Amendment

2. Claims 1, 8, 17, and 28 have been amended. Claims 1-15, 17-28 and 36-39 are currently pending.

Official Notice

3. Examiner notes that Applicant did not challenge the takings of Official Notice in the Office Action mailed October 4, 2005. The following facts/concepts have been admitted as prior art:

- Increased profit is a primary business goal of for-profit businesses
- The cost associated with manufacturing a product or subassembly would inherently include transportation or shipment costs for each step in a manufacturing process

- Applying financial analysis to part or all of a business process is a well known business strategy

Response to Arguments

4. Applicant's arguments filed February 2, 2007 have been fully considered but they are not persuasive.

Applicant argues that nothing in Lilly et al. or Sellers et al. shows, teaches or suggests calculating a profitability index for each of the plurality of demand-supply steps and selecting one demand-supply step as the manufacturing process for the commodity that maximizes the profitability index.

The Examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As per the Applicant's argument that neither of the references relied upon by the Examiner teaches a plurality of demand-supply steps related to a commodity, the Examiner asserts that the demand-supply steps of Lilly et al. are related to a commodity. Lilly et al. is directed towards providing a method and means for scheduling

work orders for manufacturing ***products*** in a manufacturing process [Column 2, lines 33-35]. Lilly et al. defines a "work order" to be a request to manufacturing one or more distinct ***parts*** in a manufacturing facility ***that may be consumed*** either by the customer who ordered the parts or by other work orders within the manufacturing facility, as in the case of a subassembly [Column 3, lines 50-54]. The Lilly et al. system is disclosed as being most useful in a facility for manufacturing ***discrete products*** [Column 4, lines 34-35].

Furthermore, the relation of demand-supply steps to a commodity is merely non-functional descriptive material, as it is not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific data. Further, the structural elements remain the same regardless of the specific data. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP ∋ 2106.*

As per the Applicant's argument that neither of the references relied upon by the Examiner teaches the calculation of a profitability index for each of a plurality of demand-supply steps, Sellers et al. teaches the concept of a profitability index, calculated based on expected investment outlays, estimated operating cash flows, assumptions and cost estimates. Lilly et al. teaches the use of work orders (scheme

data) to determine the best fit of operations based upon resource and material availability and received work orders. The Examiner asserts that expected/estimated investments, cash flows and cost estimates are analogous to resource and material availability. The Examiner also asserts that use of a profitability index as a criterion for capital decision making and as an indicator of the "desirability" of a project is analogous to the step of determining the best fit of operations. The combined teachings of Sellers et al. and Lilly et al. therefore teach the step of calculating a profitability index based on scheme data regarding order receipt, order placement, purchase and supply.

As per the Applicant's argument that neither of the references relied upon by the Examiner teaches the setting of scheme data that maximizes the profitability index, the Applicant is referred to page 8 of the Office Action mailed December 30, 2004, where the Examiner first noted that Lilly discloses means for determining the "best fit" for each work order (column 2, lines 41-44), implying that the work order would be met using a scheme that best suits the business. In that Office Action, the Examiner also took Official Notice that it is well known in for-profit business that increased profit is a primary business goal.

Furthermore, in the subsequent Office Actions (mailed October 4, 2005 and April 20, 2006), the Examiner continued to assert that "Lilly et al. discloses means for determining the "best fit" of operations for each work order based upon resource and material availability [Column 2, lines 41-44]" (page 8). The Examiner asserts that Lilly et

al. evaluates and determines the best fit of operations for each work order based upon a plurality of constraints (resource and material availability), performing the step of "setting" scheme data, implying that the work order would be met using a scheme that "best" (i.e., optimizes or maximizes) suits the business.

The Official Notice introduced in the Office Action mailed December 20, 2004 (that it is well known in for-profit business that increased profit is a primary business goal) was not properly and/or timely challenged and thus was entered as admitted prior art, as explained in the Office Action mailed April 20, 2006 (see page 2). The replacement of a scheme is contingent on the replacement scheme maximizing profitability, which suggests that, at the very least, the replacement scheme is more profitable (i.e., increases profit) than the scheme being replaced. Thus, the Examiner asserts that setting scheme data that maximizes profitability would be obviated, because replacing a base scheme with a new scheme that maximizes profitability would lead to increased profits, and would thereby "best" suit the business and the business goals of said business.

The Examiner notes that it has been admitted as prior art that increased profit is a primary business goal of for-profit businesses. By determining the "best" fit of operations for each work order, Lilly et al. optimizes (i.e. maximizes) scheme data. Thus, the Examiner asserts that Lilly et al. selects a scheme (demand-supply step) based upon the "best" fit of operations (maximum profitability).

Applicant argues that the combination of Lilly et al. and Sellers et al. is improper since there is no motivation to combine them.

The Examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Lilly et al. and Sellers et al. are directed towards scheduling work orders in manufacturing processes.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4, 6-11, 13-15, 17-28, and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lilly et al. (U.S Patent #5,787,000) in view of Sellers et al. (U.S Patent #5,311,438).

As per claims 1, 8, 15, 17 and 28, Lilly teaches a demand-supply scheme planning apparatus comprising:

(a) first means for storing data regarding a cost and a time that are needed between a purchase step and a supply step of each demand-supply step of a supply chain, the supply chain including a plurality of demand-supply steps each having an order receipt step, an order placement step, a purchase step, and a supply step **(means for receiving data in a computer, the data including resource availability information for each resource used in the manufacturing process, material availability information for each material used in the manufacturing process, and work order information, which includes materials requirement information)** [Column 3, lines 31-38] that are related to a commodity **{Lilly et al. is directed towards providing a method and means for scheduling work orders for *manufacturing products* in a manufacturing process [Column 2, lines 33-35]. Lilly et al. defines a "work order" to be a request to *manufacturing one or more distinct parts* in a manufacturing facility *that may be consumed* either by the customer who ordered the parts or by other work orders within the manufacturing facility, as in the case of a subassembly [Column 3, lines 50-54]. The Lilly et al. system is disclosed as**

being most useful in a facility for *manufacturing discrete products* [Column 4, lines 34-35]};

(b) second means for inputting an order receipt scheme of a demand-supply step of the plurality of demand-supply steps that is located at a supply-side terminal of the supply chain **(schedule all work orders that have been accepted by the manufacturer)** [Column 4, lines 39-44];

(c) third means for determining scheme data **(assigning resource capacity and a start date/time and a finish date/time to each operation)** regarding the order receipt step, the order placement step, the purchase step, and the supply step of each of the plurality of demand-supply steps based on the order receipt scheme inputted **(certain data required to schedule a work order is received in a computer, including resource availability information, material availability information, work order information, operations information, and material requirements information)** and a predetermined parameter **(determine best fit of the operations of each work order in the schedule based upon resource and material availability)** [Column 2, lines 33-40, Column 4, lines 34-38, Column 5, line 24-Column 6, line 25]; and

(e) fifth means for changing the predetermined parameter **(in global scheduling mode, the system reschedules all previously entered work orders in order of priority each time a new work order is entered in the system; the sequence in which work orders are scheduled ultimately determines the schedule; available capacity is assigned to the first work order in the sequence,**

any remaining capacity is assigned to the second work order in the sequence, and so on) [Column 9, lines 1-25].

It has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice that it is well known in for-profit business that increased profit is a primary business goal. The replacement of a scheme is contingent on the replacement scheme maximizing profitability, which suggests that, at the very least, the replacement scheme is more profitable (i.e., increases profit) than the scheme being replaced. Thus, the Examiner asserts that setting scheme data that maximizes profitability would be obviated, because replacing a base scheme with a new scheme that maximizes profitability would lead to increased profits.

The Examiner asserts that Lilly et al. evaluates and determines the "best" fit of operations for each work order based upon a plurality of constraints (resource and material availability), thus performing the step of "setting" scheme data that "best" (i.e., optimizes or maximizes) suits the business based upon resource and material availability (i.e., variable parameters) [Column 2, lines 41-44], but does not explicitly teach:

(d) fourth means for calculating a profitability index of each demand-supply step of the supply chain based on the scheme data determined and the data stored by the first means;

(f) sixth means for selecting one of the demand-supply steps by which the commodity is to be manufactured based upon scheme data that maximizes the profitability index calculated by the fourth means, of the scheme data determined by the third means using the parameter changed.

However, Sellers et al. teaches a financial analysis means that include means for calculating a profitability index **(a basic financial parameter, such as the profitability index)** [Column 89, lines 7-8, Column 113, lines 46-48, Column 114, lines 15-16, 33-34].

Lilly et al. and Sellers et al. are both directed towards scheduling work orders in manufacturing processes. Combined with admitted prior art (a result of untimely/improperly challenged Official Notice) that increased profit is a primary business goal of for-profit businesses, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Lilly et al. to include a profitability index, and implementing the scheme yielding the maximum profitability index, because the resulting combination would obtain the benefits of the use of a profitability index as a financial analysis criterion for capital decision making and also as an indicator of the "desirability" of a project, which in turn are used in determining the optimal scheduling of work orders (as indicated by the maximized profitability index), and subsequent selection of a profit maximizing strategy in alignment with the business' primary goal of increasing profit, thereby further enhancing the ability of Lilly et al. to

determine the "best" fit based on the availability of resources and materials, which is a goal of Lilly et al. [Column 2, lines 41-44].

Further regarding claim 15, both Lilly et al. and Sellers et al. are computerized systems.

Lilly et al. meets the limitations of claims 17 and 28 by further teaching the steps of:

inputting stock records of the product **(resource and material availability information for each resource used in the manufacturing process, specifying the identity and quantity of each resource available)** and the member of each demand-supply step of the supply chain **(external resource may include outside vendors or service providers)** [Column 3, lines 31-35, Column 4, lines 1-7, Column 5, lines 31-53];

storing second data regarding a transportation cost involved in the shipment of the product and a time needed for transportation of the product **(lead time necessary to obtain an additional quantity of each material; period of time required to physically transfer the output units to the next succeeding operation, "transfer time")** [Column 5, lines 43-46, Column 6, lines 21-22]; and

storing third data regarding targets of stock of the product **(identity of each material used in the manufacturing process; identity of the resource(s) at which each operation is to be performed, the sequence in which the operations are to be**

performed) and the member of each demand-supply step **(external resource may include outside vendors or service providers)** [Column 4, lines 1-7].

In addition, it has been admitted as prior art, as a result of untimely/improperly challenged Official Notice, that the costs associated with manufacturing a product or subassembly would include transportation or shipment costs for each step in a manufacturing process. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include the step of including the transportation and shipments costs for each step in a manufacturing process, because doing so provides a more accurate analysis of expected costs when assessing profitability, further enabling the Lilly-Sellers combination to select the "best" fit, which is a goal of Lilly et al. [Column 2, lines 41-44]

As per claim 2, Lilly et al. teaches an apparatus according to claim 1, wherein the commodity includes a product and a part **(data required to schedule a work order is received in a computer, such as material availability information that includes the identity of each material used in the manufacturing process and the quantity of each material available)** [Column 5, lines 43-54].

Claim 9 recites limitations already addressed by the rejection of claim 2 above; therefore, the same rejection applies.

As per claim 3, Lilly et al. teaches an apparatus according to claim 1, wherein the commodity includes a service **{insofar as the manufacturer is manufacturing and providing items requested in the work order to the customer}**.

Claim 10 recites limitations already addressed by the rejection of claim 3 above; therefore, the same rejection applies.

As per claim 4, Lilly et al. teaches an apparatus according to claim 1, wherein the third means determines an amount of order placement of the demand-supply step, based on at least an amount of order receipt, an amount of stock, and a target amount of stock of the demand-supply step **(material availability information includes the identity and quantity of each material used in the manufacturing process; work order information includes the identity and quantity of the part to be manufactured; material requirements information includes the identity and quantity of materials needed for an operation, the various quantity expressions are reduced to a specific quantity of the part which is required; material availability is expressed in terms of supply and demand for each material used in the manufacturing process)** [Column 5, lines 43-67, Column 6, lines 50-54, Column 8, lines 32-47].

Claim 11 recites limitations already addressed by the rejection of claim 4 above; therefore, the same rejection applies.

As per claim 6, Lilly et al. teaches an apparatus according to claim 1, wherein the first means further stores data regarding an order-receivable amount of each demand-supply step **(scheduling work order for manufacturing products in a manufacturing process, wherein each operation in the work order is assigned resource capacity, a start and finish date/time based upon the resource and material requirements of the operation and the availability of the resource capacity and materials in the manufacturing facility)**, and the fifth means changes a parameter regarding order receipt **(in global scheduling mode, the system reschedules all previously entered work orders in order of priority each time a new work order is entered in the system; the sequence in which work orders are scheduled ultimately determines the schedule; available capacity is assigned to the first work order in the sequence, any remaining capacity is assigned to the second work order in the sequence, and so on)**, as one of the predetermined parameter, within the order-receivable amount [Column 2, lines 33-40, Column 9, lines 1-25].

Claim 13 recites limitations already addressed by the rejection of claim 6 above; therefore, the same rejection applies.

As per claim 7, Lilly et al. teaches an apparatus according to claim 1, wherein the fifth means changes a parameter that sets a starting timing of the order placement step

(in global scheduling mode, the system reschedules all previously entered work orders in order of priority each time a new work order is entered in the system; the sequence in which work orders are scheduled ultimately determines the schedule; available capacity is assigned to the first work order in the sequence, any remaining capacity is assigned to the second work order in the sequence, and so on) [Column 9, lines 1-25].

Claim 14 recites limitations already addressed by the rejection of claim 7 above; therefore, the same rejection applies.

As per claim 18, Lilly et al. teaches an apparatus according to claim 17, wherein the fifth means determines a deviation between a value obtained by subtracting the order receipt scheme of the demand-supply step located at the shipment-side terminal from the stock record of the demand-supply step and the stock target value of the demand-supply step **(material availability is determined by netting the demand and supply lists),** as an amount of order placement, and distributing the amount of order placement as order placement to a demand-supply step where the order placement from the demand-supply step at the shipment-side terminal is possible **(if the quantity of the material(s) available on the proposed start date/time does not satisfy the material requirement for the operation, then additional material must be obtained)** [Column 8, lines 38-47, 51-58, Column 11, lines 24-35, Column 12, lines 16-34].

Neither Lilly et al. nor Sellers et al. explicitly teaches the step of distributing order placement in a manner that profit increases. However, it has been admitted as prior art, as a result of untimely/improperly challenged Official Notice, that the primary business goal of for-business organizations is to increase profits, thereby obviating the step of taking cost and time considerations of work orders into consideration when ordering additional quantities of supplies/parts/materials. Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include the step of distributing orders so that profit increases, because doing so further enhances the ability of Lilly et al. to determine the "best" fit based on the availability of resources and materials, which is a goal of Lilly et al. [Column 2, lines 41-44].

As per claim 19, Lilly et al. teaches an apparatus according to claim 17, further comprising:

(a) sixth means for setting an order receivable range of each demand-supply step based on a fourth data regarding a product order receivable range of each demand-supply step stored in data stored by the first means **(work order information includes the release date (when work should commence) and want date (when work must be complete) for the work order)** [Column 5, lines 55-57]; and

(b) seventh means for determining appropriateness of each demand-supply step based on the order receivable range set by the sixth means and the order receipt of each demand-supply step set by the fifth means **(in the global scheduling mode,**

all work orders in the system are rescheduled in the order of (1) work order want date, if no work order priority is specified; or (2) work order priority and want date within the same priority level, if a work order priority is specified) [Column 9, lines 15-19].

As per claim 20, Lilly et al. teaches an apparatus according to claim 19, wherein the seventh means determines whether a processing capability of each demand-supply step is excess or insufficient **(user specifies the resource capacity that is required to perform a particular operation, specifying a minimum and/or maximum resource capacity; if the quantity of the material(s) available on the proposed start date/time does not satisfy the material requirement for the operation, then additional material must be obtained)** [Column 7, lines 26-31, Column 8, lines 38-47, 51-58].

As per claim 21, Lilly et al. teaches an apparatus according to claim 17, further comprising:

(a) sixth means for setting an order receivable range of each demand-supply step based on a fourth data regarding a product order receivable range of each demand-supply step stored in data stored by the first means **(work order information includes the release date (when work should commence) and want date (when work must be complete) for the work order)** [Column 5, lines 55-57];

(b) seventh means for determining whether the order receipt of each demand-supply step set by the fifth means is within the order receivable range set for the corresponding demand-supply step by the sixth means **(if the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time)** [Column 8, lines 63-67, Column 12, lines 16-34]; and

(c) eighth means for, if the seventh means determines that the order receipt is not within the order receivable range, changing the schema data set by the fifth means so that the order receipt of the demand-supply step subjected to the determination becomes within the corresponding order receivable range **(if the lead time is greater than the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time)** [Column 8, lines 60-63, Column 12, lines 16-34].

As per claim 22, Lilly et al. teaches an apparatus according to claim 21, wherein the eighth means switches a portion or a whole amount of the order receipt of the demand-supply step subjected to the determination to order receipt of a demand-supply step that is capable of shipping a product identical to that shipped by the demand-supply step subjected to the determination **(If the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the**

start date/time, then the operation is scheduled for the proposed start date/time. If, on the other hand, the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time) [Column 8, lines 60-67, Column 12, lines 16-34].

As per claim 23, Lilly et al. teaches an apparatus according to claim 21, wherein the seventh means changes, in time, at least an amount of the order receipt of the demand-supply step subjected to the determination relative to the order receipt scheme **(If the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time. If, on the other hand, the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time)** [Column 8, lines 60-67, Column 12, lines 16-34].

As per claim 24, Lilly et al. teaches an apparatus according to claim 23, wherein the seventh means determines whether a sum of the changed order receipt and the order receipt set by the fifth means is within the order receivable range set by the sixth

means, if the eighth means accomplishes order receipt changing, in time, at least an amount of the order receipt **(If the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time. If, on the other hand, the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time)** [Column 8, lines 60-67, Column 12, lines 16-34].

As per claim 25, Lilly et al. teaches an apparatus according to claim 21, wherein the eighth means changes at least a portion of the third data of each demand-supply step stored by the first means **(material availability information is updated each time that an operation is scheduled by the system in order to reflect the material demand in the time period the material is needed for the scheduled operation)** [Column 5, lines 48-52].

As per claim 26, Lilly et al. teaches an apparatus according to claim 21, wherein the eighth means changes the scheme data so that the order receipt of each demand-supply step becomes within the corresponding order receivable range **(if the lead time is less than or equal to the difference between the current date/time and the**

proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time; user specifies the resource capacity that is required to perform a particular operation, specifying a minimum and/or maximum resource capacity; if the quantity of the material(s) available on the proposed start date/time does not satisfy the material requirement for the operation, then additional material must be obtained) [Column 7, lines 26-31, Column 8, lines 38-47, 51-58, 63-67, Column 11, lines 24-35, Column 12, lines 16-34].

Neither Lilly et al. nor Sellers et al. explicitly teaches the step of changing scheme data for the purposes of increasing the profitability index. However, it has been admitted as prior art, as a result of untimely/improperly challenged Official Notice, that the primary business goal of for-business organizations is to increase profits, thereby obviating the step of taking cost and time considerations of work orders into consideration when ordering additional quantities of supplies/parts/materials and scheduling work orders for completion/production. Thus, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include the step of changing scheme data to yield an increased profitability index, because doing so would update the availability of resources and materials, further enhancing the ability of Lilly et al. to determine the "best" fit, which is a goal of Lilly et al. [Column 2, lines 41-44].

As per claim 27, Lilly et al. teaches an apparatus according to claim 17, further comprising output means for outputting the scheme data set by the fifth means **(means for displaying on a computer screen the assigned resource capacity, assigned start and finish date/time for each operation in a graphical format)** [Column 3, lines 43-47].

As per claim 36, Lilly et al. teaches an apparatus according to claim 1, further comprising an adjustment means for adjusting a distribution of the scheme data regarding the order receipt step, the order placement step, the purchase step and the supply step for each of the plurality of demand-supply steps **(if the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time; user specifies the resource capacity that is required to perform a particular operation, specifying a minimum and/or maximum resource capacity; if the quantity of the material(s) available on the proposed start date/time does not satisfy the material requirement for the operation, then additional material must be obtained)** [Column 7, lines 26-31, Column 8, lines 38-47, 51-58, 63-67, Column 11, lines 24-35, Column 12, lines 16-34].

Neither Lilly et al. nor Sellers et al. explicitly teaches the step of adjusting scheme data so that the profitability index increase. However, it has been admitted as

prior art, as a result of untimely/improperly challenged Official Notice, that the primary business goal of for-business organizations is to increase profits, thereby obviating the step of taking cost and time considerations of work orders into consideration when ordering additional quantities of supplies/parts/materials and scheduling work orders for completion/production. Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include the step of adjusting scheme data so that the profitability index increases, because doing so would update the availability of resources and materials, further enhancing the ability of Lilly et al. to determine the "best" fit, which is a goal of Lilly et al. [Column 2, lines 41-44].

As per claim 37, Lilly et al. teaches a program according to claim 8, further comprising the step of adjusting a distribution of the scheme data regarding the order receipt step, the order placement step, the purchase step and the supply step for each of the plurality of demand-supply steps **(if the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time; user specifies the resource capacity that is required to perform a particular operation, specifying a minimum and/or maximum resource capacity; if the quantity of the material(s) available on the proposed start date/time does not satisfy the material requirement for the operation, then additional material must be obtained)** [Column

7, lines 26-31, Column 8, lines 38-47, 51-58, 63-67, Column 11, lines 24-35, Column 12, lines 16-34].

Neither Lilly et al. nor Sellers et al. explicitly teaches the step of adjusting scheme data so that the profitability index increases. However, it has been admitted as prior art, as a result of untimely/improperly challenged Official Notice, that the primary business goal of for-business organizations is to increase profits, thereby obviating the step of taking cost and time considerations of work orders into consideration when ordering additional quantities of supplies/parts/materials and scheduling work orders for completion/production. Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include the step of adjusting scheme data so that the profitability index increases, because doing so would update the availability of resources and materials, further enhancing the ability of Lilly et al. to determine the "best" fit, which is a goal of Lilly et al. [Column 2, lines 41-44].

As per claim 38, Lilly et al. teaches an apparatus according to claim 17, wherein said fifth means adjusts the scheme data regarding order receipt, order placement, purchase and shipment of each demand-supply step **(if the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed**

start date/time; user specifies the resource capacity that is required to perform a particular operation, specifying a minimum and/or maximum resource capacity; if the quantity of the material(s) available on the proposed start date/time does not satisfy the material requirement for the operation, then additional material must be obtained) [Column 7, lines 26-31, Column 8, lines 38-47, 51-58, 63-67, Column 11, lines 24-35, Column 12, lines 16-34].

Neither Lilly et al. nor Sellers et al. explicitly teaches the step of adjusting scheme data so that the profitability index increases. However, it has been admitted as prior art, as a result of untimely/improperly challenged Official Notice, that the primary business goal of for-business organizations is to increase profits, thereby obviating the step of taking cost and time considerations of work orders into consideration when ordering additional quantities of supplies/parts/materials and scheduling work orders for completion/production. Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include the step of adjusting scheme data so that the profitability index increases, because doing so would update the availability of resources and materials, further enhancing the ability of Lilly et al. to determine the "best" fit, which is a goal of Lilly et al. [Column 2, lines 41-44].

As per claim 39, Lilly et al. teaches a program according to claim 28, further including the step of adjusting the scheme data regarding order receipt, order

placement, purchase and shipment of each demand-supply step **(if the lead time is less than or equal to the difference between the current date/time and the proposed start date/time, then the system adds the excess to the proposed start date/time to determine the start date/time, then the operation is scheduled for the proposed start date/time; user specifies the resource capacity that is required to perform a particular operation, specifying a minimum and/or maximum resource capacity; if the quantity of the material(s) available on the proposed start date/time does not satisfy the material requirement for the operation, then additional material must be obtained)** [Column 7, lines 26-31, Column 8, lines 38-47, 51-58, 63-67, Column 11, lines 24-35, Column 12, lines 16-34].

Neither Lilly et al. nor Sellers et al. explicitly teaches the step of adjusting scheme data so that the profitability index increase. However, it has been admitted as prior art, as a result of untimely/improperly challenged Official Notice, that the primary business goal of for-business organizations is to increase profits, thereby obviating the step of taking cost and time considerations of work orders into consideration when ordering additional quantities of supplies/parts/materials and scheduling work orders for completion/production. Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include the step of adjusting scheme data so that the profitability index increases, because doing so would update the availability of resources and materials,

further enhancing the ability of Lilly et al. to determine the "best" fit, which is a goal of Lilly et al. [Column 2, lines 41-44].

7. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lilly et al. (U.S Patent #5,787,000) in view of Sellers et al. (U.S Patent #5,311,438) as applied to claims 4 and 11 above, and further in view of Edstrom et al. (U.S Patent #5,233,533).

As per claim 5, neither Lilly et al. nor Sellers et al. explicitly teaches an apparatus according to claim 4, wherein the parameter includes the target amount of stock, and the fifth means changes the target amount of stock.

However, Edstrom et al. teaches an allocation of inventory so as to determine a target amount **(daily target amount of "stock")**, enabling a net available amount per day, from which a manufacturing or purchasing order is generated for materials not available. [Column 14, line 62 – Column 15, line 6].

Similar to Lilly et al. and Sellers et al., Edstrom et al. is also directed towards scheduling the manufacture of items. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the Lilly-Sellers combination to include target stock as a parameter that is changed when determining the scheme that maximizes the profitability index, such as suggested by Edstrom et al.'s daily

computation of the available stock amount, in order to ensure that the stock amount is not below a desired level based on projected or historical work order information, further updating the availability of resources and materials, and enhancing the ability of Lilly et al. to determine the "best" fit, which is a goal of Lilly et al. [Column 2, lines 41-44].

Claim 12 recites limitations already addressed by the rejection of claim 5 above; therefore, the same rejection applies.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Weber et al. (USPGPub 2002/0156663) is directed towards optimizing supply chain models by defining scenarios and constraints.

Baseman et al. (US Patent #6,671,673) is directed towards a method for integrated supply chain management while also maximizing profitability. Strategic business design of the supply chain network, production sourcing, facility location/placement, vendor selection, inventory management, product allocation to customers, and customer order scheduling are among the supply chain steps in which linear programming techniques are used to maximize profits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Choi whose telephone number is (571) 272 6971. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PC

April 25, 2007

/C. Michelle Tarae/
C. Michelle Tarae
Primary Patent Examiner
Art Unit 3623